

REMARKS

Claims 1-7 are all the claims pending in the application.

35 USC § 112:

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite. In particular, the Examiner questions the phrase “just before the crank angle” in claim 1. Applicants amend claim 1 to address the Examiner’s concern. The Examiner also makes note of the phrase “the stored numbers” in claims 3-5 and asserts that it lacks antecedent basis. Claims 3-5 are amended to clarify this recitation thereby addressing the antecedent basis issue. It is respectfully submitted that the indefinite issues have been addressed and the rejection should be withdrawn. Claim 1 is also amended to edit the language referring to the starter and the crank angle sensor. It will be appreciated that these amendments were made for clarification of language and not because of prior art.

35 USC § 103:

Claims 1-6

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mingo et al. (US 6,435,158 B1 [hereinafter “Mingo”]) in view of Ott et al. (US 5,622,153 [hereinafter “Ott”]). The rejection is respectfully traversed in view of the following remarks.

The Examiner contends that Mingo discloses an engine control system with a start control and refers to Figure 8. However, Applicants submit that after the Examiner again reviews the claims in view of Mingo, it will be apparent that the claimed features are not taught

nor suggested. This is because Mingo does not teach or suggest a start determination unit for determining whether starting the internal combustion engine is to be stopped or continued based on the crank angle and the number of revolutions just before the starter detection unit detects the starter being switched from a drive state to a non-drive state when the detected number of revolutions is less than idling speed. At least these features are not taught nor suggested by the applied art.

Instead, Mingo teaches using a crank position sensor signal to determine a rotational speed of the vehicle, but does not extend this teaching to provide the combination of novel features found in claim 1 (see col. 5, lines 59-63 of Mingo). The features of claim 1 provide a start control apparatus that improves aspects of the art through a unique combination of elements. Because Mingo does not teach nor suggest such a combination of elements, the rejection should be withdrawn.

The Examiner also acknowledges that Mingo does not disclose the recited cam sensor and, thus, cites a crank angle sensor 10 and a cam sensor 14 in Ott. Applicants submit that this disclosure in Ott fails to make up for the deficient teachings of Mingo discussed above in regard to claim 1. Upon further review, it is believed that the Examiner will reconsider and withdraw the rejection. However, it is also pointed out that a *prime facie* case of obviousness requires that the prior art must suggest the desirability of the claimed invention. (See MPEP §2143.01.) The Examiner's alleged motivation to make the proposed combination is to "provide a suitable apparatus..." (See page 3, lines 8-9 of the Office Action.) It is respectfully pointed out that Mingo (and Ott) would not have led one to believe that the currently disclosed device in Mingo

is unsuitable. Further, Mingo teaches away from being modified to include additional sensors and arrangements because of it teaching to provide starting systems “without using complicated sensors and computational techniques.” (See col. 1, lines 42-45.) Thus, Applicants submit that one would not have modified Mingo to include additional sensors in light of this reference teaching to do the opposite.

Applicants also point out that the Examiner has not provided a grounds of rejection regarding the features of claims 2-6. If the rejection is not withdrawn, the Examiner is requested to provide Applicants with his reasoning why claims 2-6 were rejected. Such a description would help the Applicants assess the merits of the case for appeal, if needed.

The rejection of claim 1 under 35 U.S.C. § 103(a) is accordingly requested to be withdrawn at least because of the above-noted reasons. The rejection of claims 2-5 is also requested to be withdrawn at least because of these claims respectively depending upon claim 1, in addition to their individual, non-obvious features.

Claim 7

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mingo in view of Ott as applied to claims 1-6 above, and further in view of Kopera (US 4,106,460). The rejection is respectfully traversed in view of the following remarks.

Kopera is relied upon for allegedly teaching to control an engine ignition so that energization is terminated after a predetermined time at cranking speeds. Claim 7 depends from claim 1 and is submitted to be patentable over the references at least by virtue of its dependency.

AMENDMENT UNDER 37 C.F.R. § 1.111
Appln. No.: 10/669,661

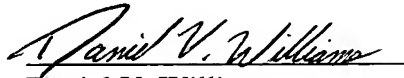
Attorney Docket No.: Q77221

This is because the application of Kopera fails to supplement the deficient teachings of Mingo and Ott with respect to at least the features of claim 1. Further, the deficient teaching of Mingo and Ott are not made obvious in view of Kopera. The rejection of claim 7 is respectfully requested to be withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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